UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/564,120	04/27/2006	Detlef Michelsson	RECP:113US	8891

24041 7590 09/30/2008

SIMPSON & SIMPSON, PLLC
5555 MAIN STREET
WILLIAMSVILLE, NY 14221-5406

EXAMINER	
SENE, PAPE A	
ART UNIT	**PAPER NUMBER**
2812	

MAIL DATE	DELIVERY MODE
09/30/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/564,120	MICHELSSON, DETLEF	
	Examiner	Art Unit	
	PAPE SENE	2812	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 January 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 January 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *01/10/2006*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim **1 and 15** are objected to because of the following informalities: In claim 1, the phrase "from the a center point" should be "from a center point". In claim 15, the phrase "profile are replaced" should be "is replaced".

2. Appropriate correction is required.

Response to Arguments

1. Arguments by applicant have been addressed within the office action as to make it correspond with each limitation discussed.

2. Regarding, the argument that Futatsuya does not disclose a reference wafer: Applicant did not consider in its arguments the teaching of Wihl and Nakamura, which were combined with the disclosure of Futatsuya to reject the claims. Futatsuya discloses using a mask pattern; and it is explained by the examiner, that it would have been obvious with a teaching of Wihl, to accomplish a same procedure with a wafer.

3. Applicant's arguments with respect to claims 1, 16 and 17 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims **1-15 and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Futatsuya (U.S. Patent No. 7,047,516) in view of Wihl (U.S. Patent Application No. 2002/0054702) in further view of Nakamura (U.S. Patent Application No. 2004/0027618).

1. Referring to claim **1**, Futatsuya discloses a method for determining **(fig. 8, Col. 2, Ln. 22-44)** defects **(the mask pattern, wherein it is the object to be corrected and does not have a desired form, Col. 2, Ln. 45-65)** in recorded mask pattern images by the steps, which comprise: recording an image of at least one reference mask pattern **(mask pattern, which is the object to be corrected, Col. 1, Ln. 52-55; Column 2, Ln. 45-55 {<There is a teaching of recording an image of the reference mask pattern: (Col. 3, Ln. 42-64, Col. 4, Ln. 37-50 and Col. 5, Ln. 1-13, wherein calculating light intensity values of the object is also obtaining its image, and to make a comparison and a correction, an image must have been recorded>}}>; <{An image of the mask pattern must be obtained in order to find out if it has the desired form; for correcting the object to a desired form, the image of the object of desired form must first be recorded (Col. 2, Ln. 22-32 and Ln. 54-67)}>; <{Correcting a proximity effect in exposing a mask pattern by lithography does involve recording an image (Col. 2, Ln. 37-38)}>)**, determining and recording on a computer **(Computer, Col. 7, Ln 56-65)** a radial distribution **(Col. 6, Ln. 15-67)** of values **(light intensity values, Col. 3, Ln. 53-64)** measured on the at least one reference mask pattern as a radial homogeneity function **(Col. 6, Ln. 15-67, {< Col. 3, Ln. 42-52, wherein there is no need to obtain a light intensity distribution of the whole surface of the mask pattern, just the portions that need to be corrected>})**, the homogeneity function determined from respective minimum values measured at respective distances from a center point of the reference mask pattern **(fig. 9, Col. 3, Ln. 42-64 and Col. 6, Ln. 51—Col. 7, Ln. 44, wherein the measurement is done from the center of the side area, wherein a side of the mask pattern is getting**

tested; It would be done at a center of the mask pattern if the whole mask pattern was getting tested, or a side that needs to be tested and corrected, is located in the middle of the mask pattern, having as center, the center of the mask pattern, but as mentioned on Col. 3, Ln. 42-64, only sides that need correction should be tested), and changing a radially dependent sensitivity profile **(intensity values, Col. 6, Ln. 15-67)** while taking into account the radial homogeneity function **(Col. 6, Ln. 15-67)** of the at least one reference mask pattern by varying at least one parameter **(weight coefficient W(n)** of the sensitivity profile **(light intensity values, Col. 7, Ln. 1-7)**, a learned sensitivity profile **(light intensity values)** being determined visually by comparison with the radial homogeneity function **(Col. 6, Ln. 15-67)**.

Futatsuya does not disclose a learned sensitivity profile **(light intensity values)** being determined visually by comparison with the radial homogeneity function, and does not either disclose determining defects specifically in wafers.

Wihl teaches a defect detection apparatus, which further comprises **([0090]-[0095]) a learned sensitivity profile ([0095], digitized image)** being determined visually **(displayed on display 22)** by comparison **([0093], comparison between the die and a simulated image generated by database is done)** with the database image data, and further teaches ([0036]-[0039]) that the same system **(10, fig. 1)** used for inspecting defects in masks, is used to also inspect defects to inspect mask patterns **[0036]**.

Futatsuya does not disclose determining and representing on a user interface a radial distribution of values measured.

Nakamura teaches an image defect detecting method, which further comprises determining and representing on a user interface measured values **(fig. 4)**.

It would have been obvious to a person of ordinary skill at the time the invention was made to modify the disclosure of Futatsuya to include the teaching of Wihl and the teaching of Nakamura to further comprise a method for determining defects in recorded wafer images by the steps, which comprise: recording an image of at least one reference wafer, determining and representing on a user interface a radial distribution of values measured on the at least one reference wafer as a radial homogeneity function, and changing a radially dependent sensitivity profile while taking into account the radial homogeneity function of the at least one reference wafer by varying at least one parameter of the sensitivity profile, a learned sensitivity profile being determined visually by comparison with the radial homogeneity function.

Wihl provides motivation in **([0090]-[0095])**; it would have been obvious to combine Futatsuya disclosure with Wihl teaching for the purpose of enabling the operator to compare the displayed image to the database image.

Nakamura provides motivation in **([0153]-[0171])**; it would have been obvious to combine Nakamura teaching with Futatsuya disclosure and Wihl teaching for the

purpose of making easier on the user to determine the defect image and make necessary adjustments.

2. Referring to claim **2**, Futatsuya, Wihl and Nakamura disclose a method for determining defects in recorded wafer images as defined in claim 1, and Futatsuya further discloses that the determination of defects in said recorded mask pattern images is carried out on at least one other mask pattern by comparison between the learned sensitivity profile of the at least one reference mask pattern with the measured radial distribution of the homogeneity function of the at least one other mask pattern, a defect being determined from the comparison **(Col. 8, Ln. 43-50; when the object to be corrected does not have the desired form)** of the measured radial distribution of the homogeneity function with the learned sensitivity profile, and Wihl further teaches a wafer.

3. Referring to claim **3**, Futatsuya, Wihl and Nakamura disclose a method for determining defects in recorded wafer images as defined in claim 2, and Futatsuya further discloses that the defect is determined by measuring the radial distribution of the homogeneity function falling below the learned sensitivity profile and marking a graphic representation of the at least one other mask pattern **((Col. 5, Ln. 47-60)when the measured light intensity values are different from the desired values)**, and Wihl further teaches a wafer.

4. Referring to claim **4**, Futatsuya, Wihl and Nakamura disclose a method for determining defects in recorded wafer images as defined in claim 1, and Futatsuya further discloses that the learned sensitivity profile **(light intensity values for desired target object)** depends on the distance from a center point of the mask pattern to a radial distance from a center point of the mask pattern **(fig. 9, Col. 3, Ln. 42-64 and Col. 6, Ln. 41—Col. 7, Ln. 44)**, and Wihl further teaches a wafer.

5. Referring to claim **5**, Futatsuya, Wihl and Nakamura disclose a method for determining defects in recorded wafer images as defined in claim 1, and Futatsuya further discloses that several different profile forms **(proximity effect correction Col. 4, Ln. 54-67, optimal moving amounts of sides Col.5, Ln. 1-12)** are selected to determine the learned sensitivity profile.

6. Referring to claim **6**, Futatsuya, Wihl and Nakamura disclose a method for determining defects in recorded wafer images as defined in claim 5, and Futatsuya further discloses that three different profile forms **(proximity effect correction Col. 4, Ln. 54-67, optimal moving amounts of sides Col. 5, Ln. 1-12, and weight coefficient)** are selected to determine the learned sensitivity profile.

7. Referring to claim **7**, Futatsuya, Wihl and Nakamura disclose a method for determining defects in recorded wafer images as defined in claim 1, and Futatsuya further discloses that a first profile form is selected independent **(proximity effect correction, Col. 4, Ln. 54-67)** of a radial position on the mask pattern, and Wihl further teaches a wafer.

8. Referring to claim **8**, Futatsuya, Wihl and Nakamura disclose a method for determining defects in recorded wafer images as defined in claim 7, and Futatsuya further discloses that a second profile form **(optimal moving amounts of sides, Column 5, Ln. 1-12)** is selected and comprises a first and a second section **(sides a and b, fig. 5A)**, one of which **(fig. 5A, side a to be corrected)** can be varied in slope.

9. Referring to claim **9**, Futatsuya, Wihl and Nakamura disclose a method for determining defects in recorded wafer images as defined in claim 8, and Futatsuya further discloses that a third profile form (optimal moving amounts of sides, Column 5, Ln. 1-12) is provided having a first, second and third sections (sides a, b and c, fig. 5A) of which one (fig. 5A, side a to be corrected) can be varied in slope.

10. Referring to claim **10**, Futatsuya, Wihl and Nakamura disclose a method for determining defects in recorded wafer images as defined in claim 1, and Futatsuya further discloses that at least one parameter **(weight coefficient; Col. 6, Ln. 41-67)** is changed so as to adapt the sensitivity profile **(light intensity values)** to the radial homogeneity function of a mask pattern, and Wihl further teaches a wafer.

11. Referring to claim **11**, Futatsuya and Wihl disclose a method for determining defects in recorded wafer images as defined in claim 10, and Futatsuya further discloses that the one parameter defines a radial position of a transition between two sections **(undesired target object to desired target object)** of the sensitivity profile **(light intensity values, Col. 6, Ln. 39-50)** differing in slope.

12. Referring to claim **12**, Futatsuya and Wihl disclose a method for determining defects in recorded wafer images as defined in claim 10, and Futatsuya further discloses that the sensitivity profile comprises at least three levels of settings **(A(n), B(n), C(n))** and a parameter **(x)** defines the level of the sensitivity profile **(Col. 6, Ln. 31-50)**.

13. Referring to claim **13,** Futatsuya, Wihl and Nakamura disclose a method for determining defects in recorded wafer images as defined in claim 12, and Nakamura further discloses that the setting of the level can be changed by means of a slider **([0169] and [0170])**.

14. Referring to claim **14,** Futatsuya, Wihl and Nakamura disclose a method for determining defects in recorded wafer images as defined in claim 1, and Wihl further discloses that several learned sensitivity profiles **(outputs, [0095]) are combined [0095]**).

15. Referring to claim **15**, Futatsuya, Wihl and Nakamura disclose a method for determining defects in recorded wafer images as defined in claim 1, and Wihl further discloses that a learned sensitivity profile (image from database) is replaced by a relearned sensitivity profile **(image of the second die)** at any time **([0020], [0021] and [0038])**.

17. Referring to claim **17**, Futatsuya discloses a method for determining **(fig. 8, Col. 2, Ln. 22-44)** defects **(the mask pattern, wherein it is the object to be corrected and does not have a desired form, Col. 2, Ln. 45-65)** in recorded mask pattern images by the steps, which comprise: recording an image of at least one reference mask pattern **(mask pattern, which is the object to be corrected, Col. 1, Ln. 52-55; Column 2, Ln. 45-55)**, d determining and recording on a computer **(Computer, Col. 7, Ln 56-65)** a radial distribution **(Col. 6, Ln. 15-67)** of color fluctuation values **(light intensity values, Col. 3, Ln. 53-64)** measured on the at least one reference mask pattern as a radial homogeneity function **(Col. 6, Ln. 15-67, {< Col. 3, Ln. 42-52, wherein there is no need to obtain a light intensity distribution of the whole surface of the mask pattern, just the portions that need to be corrected.>})**, and changing a radially dependent sensitivity profile **(intensity values, Col. 6, Ln. 15-67)** while taking into account the radial homogeneity function **(Col. 6, Ln. 15-67)** of the at least one reference mask pattern by varying at least one parameter **(weight coefficient W(n)** of the sensitivity profile **(light intensity values, Col. 7, Ln. 1-7)**, a learned sensitivity profile **(light intensity values)** being determined visually by comparison with the radial homogeneity function **(Col. 6, Ln. 15-67)**.

Futatsuya does not disclose a learned sensitivity profile **(light intensity values)** being determined visually by comparison with the radial homogeneity function, and does not either disclose determining defects specifically in wafers.

Wihl teaches a defect detection apparatus, which further comprises **([0090]-[0095]) a learned sensitivity profile ([0095], digitized image)** being determined visually **(displayed on display 22)** by comparison **([0093], comparison between the die and a simulated image generated by database is done)** with the database image data, and further teaches ([0036]-[0039]) that the same system **(10, fig. 1)** used for inspecting defects in masks, is used to also inspect defects to inspect mask patterns **[0036]**.

Futatsuya does not disclose determining and representing on a user interface a radial distribution of values measured.

Nakamura teaches an image defect detecting method, which further comprises determining and representing on a user interface measured values **(fig. 4)**.

It would have been obvious to a person of ordinary skill at the time the invention was made to modify the disclosure of Futatsuya to include the teaching of Wihl and the teaching of Nakamura to further comprise a method for determining defects in recorded wafer images by the steps, which comprise: recording an image of at least one reference wafer, determining and representing on a user interface a radial distribution of values measured on the at least one reference wafer as a radial homogeneity function, and changing a radially dependent sensitivity profile while taking into account the radial homogeneity function of the at least one reference wafer by varying at least one parameter of the sensitivity profile, a learned sensitivity profile being determined visually by comparison with the radial homogeneity function.

Wihl provides motivation in **([0090]-[0095])**; it would have been obvious to combine Futatsuya disclosure with Wihl teaching for the purpose of enabling the operator to compare the displayed image to the database image.

Nakamura provides motivation in **([0153]-[0171])**; it would have been obvious to combine Nakamura teaching with Futatsuya disclosure and Wihl teaching for the purpose of making easier on the user to determine the defect image and make necessary adjustments.

2. Claim **16** is rejected under 35 U.S.C. 103(a) as being unpatentable over Futatsuya (U.S. Patent No. 7,047,516) in view of Wihl (U.S. Patent Application No. 2002/0054702) in further view of Nakamura (U.S. Patent Application No. 2004/0027618), and in further view of Hiroi (U.S. Patent Application Publication No. 2003/0007677).

16. Referring to claim **16**, Futatsuya discloses a method for determining **(fig. 8, Col. 2, Ln. 22-44)** defects **(the mask pattern, wherein it is the object to be corrected and does not have a desired form, Col. 2, Ln. 45-65)** in recorded mask pattern images by the steps, which comprise: recording an image of a side of at least one reference mask pattern **(mask pattern, which is the object to be corrected, Col. 1, Ln. 52-55; Column 2, Ln. 45-55)**, the image including at least one point on the side at a distance from a center of the reference mask pattern less than the radius **(fig. 9, Col. 3, Ln. 42-64 and Col. 6, Ln. 51—Col. 7, Ln. 44, wherein the measurement is done from the center of the side area, wherein a side of the mask pattern is getting tested; It would have been obvious to do it at a center of the mask pattern if the whole mask pattern was getting tested, but as mentioned on Col. 3, Ln. 42-64, only sides that need correction should be tested)**, determining and recording on a computer **(Computer, Col. 7, Ln 56-65)** a radial distribution **(Col. 6, Ln. 15-67)** of values **(light intensity values, Col. 3, Ln. 53-64)** measured on the at least one reference mask pattern as a radial homogeneity function **(Col. 6, Ln. 15-67, {<Col. 3, Ln. 42-52, wherein there is no need to obtain a light intensity distribution of the whole surface of the mask pattern, just the portions that need to be corrected>})**, and changing a radially dependent sensitivity profile **(intensity values, Col. 6, Ln. 15-67)** while taking into account the radial homogeneity function **(Col. 6, Ln. 15-67)** of the at least one reference mask pattern by varying at least one parameter **(weight coefficient W(n)** of the sensitivity profile **(light intensity values, Col. 7, Ln. 1-7)**, a learned sensitivity profile **(light intensity values)** being determined visually by comparison with the radial homogeneity function **(Col. 6, Ln. 15-67)**.

Futatsuya does not disclose a learned sensitivity profile **(light intensity values)** being determined visually by comparison with the radial homogeneity function, and does not either disclose determining defects specifically in wafers.

Wihl teaches a defect detection apparatus, which further comprises **([0090]-[0095]) a learned sensitivity profile ([0095], digitized image)** being determined visually **(displayed on display 22)** by comparison **([0093], comparison between the die and a simulated image generated by database is done)** with the database image data, and further teaches ([0036]-[0039]) that the same system **(10, fig. 1)** used for inspecting defects in masks, is used to also inspect defects to inspect mask patterns **[0036]**.

Futatsuya does not disclose determining and representing on a user interface a radial distribution of values measured.

Nakamura teaches an image defect detecting method, which further comprises determining and representing on a user interface measured values **(fig. 4)**.

It would have been obvious to a person of ordinary skill at the time the invention was made to modify the disclosure of Futatsuya to include the teaching of Wihl and the teaching of Nakamura to further comprise a method for determining defects in recorded wafer images by the steps, which comprise: recording an image of at least one reference wafer, determining and representing on a user interface a radial distribution of values measured on the at least one reference wafer as a radial homogeneity function, and changing a radially dependent sensitivity profile while taking into account the radial homogeneity function of the at least one reference wafer by varying at least one parameter of the sensitivity profile, a learned sensitivity profile being determined visually by comparison with the radial homogeneity function.

Wihl provides motivation in **([0090]-[0095])**; it would have been obvious to combine Futatsuya disclosure with Wihl teaching for the purpose of enabling the operator to compare the displayed image to the database image.

Nakamura provides motivation in **([0153]-[0171])**; it would have been obvious to combine Nakamura teaching with Futatsuya disclosure and Wihl teaching for the purpose of making easier on the user to determine the defect image and make necessary adjustments.

However, Futatsuya, Wihl and Nakamura do not specifically disclose that the wafer has a disc shape with a radius.

Hiroi (U.S. Patent Application Publication No. 2003/0007677) teaches a method for determining defects, wherein a wafer having a disc shape with a radius is used **(wafer 31, fig. 10, [0069])**.

It would have been obvious to a person of ordinary skill in the art to modify the disclosure of Futatsuya, Wihl and Nakamura, and include the teaching of Hiroi, for the purpose of speeding the conditioning operation **([0064]-[0069], Hiroi)**.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent Application Publication No. 2006/0100730 and U.S. Patent No. 6,539,106 have subject matter related to the applicant's invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAPE SENE whose telephone number is (571)270-5284. The examiner can normally be reached on 5/4/9.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Garber can be reached on (571)272-2194. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/PAPE SENE/
Examiner, Art Unit 2812

/P. S./
Examiner, Art Unit 2812

/Charles D. Garber/
Supervisory Patent Examiner, Art Unit 2812